

IN THE CLAIMS:

- 1 1. (Previously Presented) A removable nonvolatile memory device for use in a storage
2 system having an operating system kernel, comprising:
3 a plurality of partitions, each of the plurality of partitions capable of storing dif-
4 ferentiated information;
5 a first kernel image, the first kernel image stored in a first partition of the plurality
6 of partitions wherein the first kernel image is an upgrade kernel; and
7 a second kernel image, the second kernel image stored in a second partition of the
8 plurality of partitions, wherein the second kernel image is a last known good kernel.
- 1 2. (Cancelled)
- 1 3. (Previously Presented) The removable nonvolatile memory device of claim 1,
2 wherein the storage system further comprises a set of boot instructions including instruc-
3 tions for booting from the first kernel image.
- 1 4. (Previously Presented) The removable nonvolatile memory device of claim 3, wherein
2 the set of boot instructions further comprises instructions for booting from the second
3 kernel image if an error event occurs during booting from the first kernel image.
- 1 5. (Previously Presented) The removable nonvolatile memory device of claim 1, further
2 comprising a set of diagnostic software, the diagnostic software stored in a third partition
3 of the plurality of partitions.
- 1 6. (Previously Presented) The removable nonvolatile memory device of claim 5, further
2 comprising a diagnostic log, the diagnostic log stored in a fourth partition of the plurality
3 of partitions.

1 7. (Currently Amended) A storage system for a computer having a processor, a memory
2 coupled to the processor, and a system bus to which the memory and processor are cou-
3 pled, the computer having an operating system kernel and being configured to implement
4 a file system, the storage system comprising:

5 a removable nonvolatile memory device coupled to the system bus, the removable
6 nonvolatile memory device having a plurality of partitions, wherein a first partition of the
7 plurality of partitions containing a kernel image, wherein the first kernel image is an up-
8 grade kernel; and

9 a set of boot instructions resident in the storage system including instructions for
10 booting from a first set partition of the removable nonvolatile memory device and in-
11 structions for booting from an alternate set partition of the removable nonvolatile mem-
12 ory device if an error event occurs during booting from the first set partition, wherein the
13 removable nonvolatile memory device further comprises a second partition of the plural-
14 ity of partitions, the second partition containing a last known good kernel image.

1 8. (Previously Presented) The storage system of claim 7 wherein the removable nonvola-
2 tile memory device is a compact flash.

1 9. (Cancelled)

1 10. (Previously Presented) The storage system of claim 7, wherein the set of boot instruc-
2 tions are contained in firmware within the storage system.

1 11. (Previously Presented) The storage system of claim 7 further comprising a third parti-
2 tion of the plurality of partitions, the third partition containing diagnostic software.

1 12. (Previously Presented) The storage system of claim 10 further comprising a fourth
2 partition of the plurality of partitions, the fourth partition containing a diagnostic log.

1 13. (Previously Presented) A method for installing a new kernel image to a removable
2 nonvolatile memory device having a plurality of partitions in a storage system comprising
3 the steps of:

4 storing the new kernel image on a storage device;
5 copying a current boot kernel from a current boot kernel location to a last known
6 good kernel location; and
7 copying the new kernel image to the current boot kernel location.

1 14. (Previously Presented) The method of claim 11, wherein the current boot kernel loca-
2 tion is a first partition of the removable nonvolatile memory device.

1 15. (Previously Presented) The method of claim 11, wherein the last known good kernel
2 location is a second partition of the removable nonvolatile memory device.

1 16. (Previously Presented) The method of claim 11, wherein the storage device further
2 comprises one or more storage disks operatively interconnected to the storage system.

1 17. (Previously Presented) A computer-readable medium operating on a computer in a
2 network that includes a removable nonvolatile memory device having a plurality of parti-
3 tions, the computer-readable medium including program instructions for performing the
4 steps of:

5 storing a new kernel image on a storage device;
6 copying a current boot kernel from a current boot kernel location to a last known
7 good kernel location; and
8 copying the new kernel image to the current boot kernel location.

1 18. (Previously Presented) A method for installing an upgrade kernel in a computer sys-
2 tem having a removable nonvolatile memory device, the removable nonvolatile memory
3 device having at least a first partition and a second partition, the computer system cur-

4 rently executing a copy of an old kernel stored in the first partition of the removable non-
5 volatile memory device, the method comprising the steps of:

6 determining if the computer system booted from the old kernel, and if so, copying
7 the old kernel from the first partition to make a copy of the old kernel to place in the sec-
8 ond partition;

9 adjusting a set of boot variables so that the computer will boot from the second
10 partition;

11 copying a stored copy of the upgrade kernel to the first partition; and

12 adjusting the set of boot variables so that the computer will boot from the first
13 partition.

1 19. (Previously Presented) The method of claim 18 further comprising the step of:

2 verifying the copy of the old kernel written to the second partition before adjust-
3 ing the set of boot variables so that the computer will boot from the second partition.

1 20. (Currently Amended) The ~~method~~ computer readable medium of claim 17 further
2 comprising the step of :

3 verifying the copy of the upgrade kernel to the first partition before adjusting the
4 set of boot variables so that the computer will boot from the first partition.

1 21. (Previously Presented) A method for installing an upgrade kernel in a computer sys-
2 tem having a removable nonvolatile memory device, the removable nonvolatile memory
3 device having at least a first partition and a second partition, the computer system cur-
4 rently executing a copy of an old kernel stored in the second partition of the removable
5 nonvolatile memory device, the method comprising the steps of:

6 outputting a message to a user alerting the user that the computer booted from a
7 last known good kernel;

8 adjusting a set of boot variables so that the computer will boot from the second
9 partition;

10 copying a stored copy of the upgrade kernel to the first partition; and
11 adjusting the set of boot variables so that the computer will boot from the first
12 partition.

1 22. (Previously Presented) The method of claim 19 further comprising the step of:
2 verifying the copy of the upgrade kernel to the first partition before adjusting the
3 set of boot variables so that the computer will boot from the first partition.

1 23. – 28. (Cancelled)